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Communication Received from the United States of America Concerning Its Policies Regarding the Management of Plutonium

1. The Secretariat has received a letter dated 26 September 2008 from the Permanent Mission of the United States of America to the IAEA in the enclosures of which the Government of the United States of America, in keeping with its commitment under the Guidelines for the Management of Plutonium (contained in INFCIRC/549 of 16 March 1998 and hereinafter referred to as the "Guidelines"), and in accordance with Annexes B and C of the Guidelines, has made available annual figures for holdings of civil unirradiated plutonium and the estimated amounts of plutonium contained in spent civil reactor fuel as of 31 December 2007. The Permanent Mission of the United States has also communicated in its letter that there have been changes in their plutonium and fuel cycle policy since their last statement was submitted, and have additionally included a policy statement in the enclosures of the letter.

2. In light of the request expressed by the United States of America in its Note Verbale of 1 December 1997 concerning its policies regarding the management of plutonium (INFCIRC/549 of 16 March 1998), the enclosures of the letter of 26 September 2008 are attached for the information of all Member States.

ANNUAL FIGURES FOR HOLDINGS OF CIVIL UNIRRADIATED PLUTONIUM

(ANNEX B, INTERNATIONAL PLUTONIUM MANAGEMENT GUIDELINES)

National Totals	As of 31 December 2007 [Previous year's figures in brackets] Rounded to 100 kg plutonium Quantities <50 kg reported as such	
1. Unirradiated separated plutonium in product stores at reprocessing plants.	0	[0]
2. Unirradiated separated plutonium in the course of manufacture or fabrication and plutonium contained in unirradiated semi-fabricated or unfinished products at fuel or other fabricating plants or elsewhere.	<0.05 MT	[<0.05 MT]
3. Plutonium contained in unirradiated MOX fuel or other fabricated products at reactor sites or elsewhere.	4.6 MT	[4.6 MT]
4. Unirradiated separated plutonium held elsewhere.	49.3 MT	[40.3 MT]
(i) Plutonium in lines 1-4 belonging to foreign bodies.	0	[0]
(ii) Plutonium in lines 1-4 held in locations in other countries and therefore not included above.	0	[0]
(iii) Plutonium in lines 1-4 which is in international shipment prior to its arrival in the recipient State.	0	[0]

Note:

Lines 3 and 4 together list 53.9 metric tons of separated plutonium that has been declared as excess to national security needs. This, in addition to 7.6 metric tons of the plutonium included on lines 1 and 3 of Annex C, constitute the total of 61.5 metric tons of government owned plutonium that the United States has declared as excess to national security needs.

ESTIMATED AMOUNTS OF PLUTONIUM CONTAINED IN SPENT CIVIL REACTOR FUEL

(Annex C, International Plutonium Management Guidelines)

National Totals	As of 31 December 2007 [Previous year's figures in brackets] Rounded to 1000 kg plutonium Quantities <500 kg reported as such	
1. Plutonium contained in spent fuel at civil reactor sites.	480 MT	[459 MT]
2. Plutonium contained in spent fuel at reprocessing plants.	0	[0]
3. Plutonium contained in spent fuel held elsewhere.	12 MT	[12 MT]

Notes:

Line 1 includes 0.1 metric tons of formerly government owned plutonium that was transferred to civil reactors and subsequently irradiated. Line 3 includes 7.5 metric tons of government owned plutonium estimated to be remaining in spent fuel that has been declared as excess to national security needs. These, in addition to 53.9 metric tons of separated plutonium reported in lines 3 and 4 in Annex B, constitute the total of 61.5 metric tons of government owned plutonium that the United States has declared as excess to national security needs.

Plutonium and Fuel Cycle Policy Statement of the United States of America
September 2008

Fuel Cycle Research and Development

Current civil uses of nuclear power in the United States are based on a once-through fuel cycle involving the irradiation of low enriched uranium fuel in light-water reactors and the subsequent storage and eventual disposal of spent nuclear fuel in a U.S. geologic repository. However, to enable continued and expanded use of nuclear power, the United States will pursue technology solutions to better manage spent fuel. The United States continues to seek to eliminate wherever possible the accumulation of stockpiles of separated civil plutonium and, where separated plutonium stocks exist, to ensure that they are subject to the highest standards of safety, security, and international accountability. The United States seeks to develop new technologies for recycle of spent fuel that do not separate plutonium, while at the same time significantly reduce security and proliferation risks and improve physical protection at all stages of the process and facilitate waste management.

In February 2006, U.S. Energy Secretary Bodman announced the Global Nuclear Energy Partnership (GNEP), of which the Advanced Fuel Cycle Initiative (AFCI) is a part. Under the partnership, the United States will work with nations that have advanced civilian nuclear energy programs to develop and deploy innovative advanced reactors and new methods to recycle used fuel in a more proliferation-resistant manner. The United States will also enter into partnerships with other countries that wish to introduce nuclear power into their energy economies without the need also to develop uranium enrichment or used fuel reprocessing. The new recycle technologies will support the continuing U.S. policy to discourage and gradually eliminate the accumulation of separated plutonium world-wide. GNEP technologies will allow the world to produce more nuclear energy while reducing the quantity and radiotoxicity of nuclear waste, and limiting access to materials that can be used to make weapons.

The GNEP strategy includes seven elements: 1) Building a new generation of nuclear power plants in the United States; 2) Developing and deploying new nuclear recycling technologies; 3) Developing an aggressive plan to manage spent nuclear fuel in the United States, including permanent geologic disposal; 4) Designing advanced burner reactors that would produce energy from recycled nuclear fuel; 5) Establishing a reliable fuel services program that would allow developing nations to produce nuclear energy economically without building indigenous enrichment or reprocessing facilities, thereby reducing the risk of nuclear proliferation; 6) Developing and constructing small-scale reactors designed for the needs of developing countries; and 7) Enhancing international safeguards to ensure that civil nuclear energy systems are used only for peaceful purposes.

Waste Management

The Nuclear Waste Policy Act of 1982, as amended in 1987, affirmed the Federal Government's responsibility for the disposal of high-level radioactive waste and established the scientific, regulatory, and funding framework supporting the siting and development of a geologic repository.

In July 2002, President Bush signed a joint resolution passed by Congress approving the Yucca Mountain site in Nevada for the development of a geologic repository. Yucca Mountain is located about 160 kilometers northwest of Las Vegas, Nevada, on unpopulated desert land owned by the Federal Government. Geological information indicates that the regional climate has changed little over the past million years, and the long-term average precipitation has been about 30 centimeters per year. The host rock proposed for the potential repository is a welded tuff unit located about 300 meters below the surface and 300 meters above the water table.

Following the approval by Congress, the Department moved forward to prepare a license application to the Nuclear Regulatory Commission (NRC) for authorization to construct the repository. The application was submitted on June 3, 2008, and the NRC accepted (docketed) the application on September 8, 2008. The NRC is now required by statute to make a decision on the construction authorization no later than 2012.

Currently, the earliest achievable date for beginning to receive spent fuel and high-level radioactive waste at Yucca Mountain is 2020.

Plutonium Declared Excess to National Security Needs

The United States has declared 61.5 metric tons (MT) of plutonium (as reported in Annexes B and C) as excess to national security needs. This is an increase of 9 metric tons of plutonium, as announced by Secretary Bodman at the IAEA General Conference in September 2007. The majority of this plutonium was formerly part of the nuclear weapons production process. A small amount of the 61.5 MT of excess plutonium will be disposed of at the Waste Isolation Pilot Plant (WIPP) located near Carlsbad, New Mexico, but the majority of the material will be disposed of as spent fuel through the irradiation of mixed oxide (MOX) fuel; out of this 61.5 MT, the United States is proceeding with plans to dispose of at least 34 MT of separated plutonium by fabricating it into MOX fuel and irradiating it in commercial nuclear reactors under the Plutonium Disposition program. Subsequently, this spent MOX fuel would be removed from the reactors and eventually disposed of in a geologic repository. This approach would achieve what is generally understood to be the "spent fuel standard," in which excess plutonium is made as inaccessible and unattractive for retrieval and use in nuclear weapons as the plutonium in spent nuclear fuel from commercial reactors. The additional 9 MT of plutonium declared excess in 2007 is also available to be disposed of using this approach, pending certain environmental and legal reviews.

The Plutonium Disposition program involves the construction of two major facilities at the Department of Energy's Savannah River Site in South Carolina. One facility will convert plutonium from metallic components into a plutonium oxide powder. The second facility will fabricate nuclear fuel assemblies suitable for use in commercial reactors from plutonium-uranium oxide. This plutonium was separated long ago, and the United States is now seeking to convert the material into the form of spent fuel to reduce the risk of its theft or re-use in nuclear weapons, thereby helping to ensure the irreversibility of the arms reduction process.